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On the use of an inverse shortest paths algorithm for recovering linearly correlated costs

Burton, D.; Toint, Ph.L.

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ON THE USE OF AN INVERSE SHORTEST PATHS
ALGORITHM FOR RECOVERING LINEARLY
CORRELATED COSTS

by D. Burton[†] and Ph.L. Toint[‡]

September 11, 1995

Abstract. This paper considers the inverse shortest paths problem where arc costs are subject to correlation constraints. The motivation for this research arises from applications in traffic modelling and seismic tomography. A new method is proposed for solving this class of problems. It is constructed as a generalization of the algorithm presented in [1] for uncorrelated inverse shortest paths. Preliminary numerical experience with the new method is presented and discussed.

[†]Belgian National Fund for Scientific Research
Department of Mathematics
Facultés Universitaires ND de la Paix
B-5000 Namur, Belgium

[‡]Department of Mathematics
Facultés Universitaires ND de la Paix
B-5000 Namur, Belgium

Keywords : graph theory, shortest paths, inverse problems, quadratic programming, traffic modelling.

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